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10/722,706

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Peter J. Schubert

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EXAMINER

ARTHUR JEANGLAUDE, GERTRUDE

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PETER J. SCHUBERT

Appeal 2008-1536
Application 10/722,706
Technology Center 3600

Decided: October 8, 2008

Before WILLIAM F. PATE, III, LINDA E. HORNER, and
JOHN C. KERINS, *Administrative Patent Judges*.

KERINS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Peter J. Schubert (Appellant) seeks our review under 35 U.S.C. § 134 of the final rejection of claims 1-31, the only claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF DECISION

We REVERSE.

THE INVENTION

Appellant's claimed invention is to an apparatus and method for estimating the roll angle of a vehicle for the purposes of predicting a future roll angle of the vehicle. The apparatus comprises an angular accelerometer which senses the angular acceleration of the vehicle and outputs a signal indicative of the same, an integrator which integrates the sensed angular acceleration signal to produce a vehicle angular rate, and a predictor which uses the sensed angular acceleration, the determined angular rate, and the current roll angle, to predict a future roll angle of the vehicle. This apparatus is said to be useful in predicting vehicle rollover. (Specification, ¶[0008]).

Claim 1, reproduced below, is representative of the subject matter on appeal.

1. A roll angle estimation apparatus for predicting a future roll angle of a vehicle, said apparatus comprising:

an angular accelerometer for sensing angular acceleration of a vehicle and producing an output signal indicative thereof;

an integrator for integrating the sensed angular acceleration signal and producing an angular rate;
and

a predictor for predicting a future roll angle of the vehicle as a function of the sensed angular

acceleration, the angular rate, and a current roll angle.

THE REJECTION

The Examiner relies upon the following as evidence of unpatentability:

Schiffmann US 6,192,305 B1 Feb. 20, 2001

The following rejection is before us for review:

1. Claims 1-31 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Schiffmann.

ISSUES

The issue joined in this appeal is whether Appellant has shown that the Examiner erred in finding that Schiffmann discloses the use of an angular accelerometer for sensing angular acceleration and an integrator for integrating the sensed angular acceleration to produce an angular rate.

FINDINGS OF FACT

The following enumerated findings of fact (FF) are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

FF 1. Schiffmann discloses the use of a value for angular acceleration of a vehicle in a method and system for predicting a future roll angle of a vehicle. (Schiffmann, Fig. 12; col. 8, ll. 13-24; col. 13, ll. 12-23).

FF 2. In Schiffmann, a value for angular acceleration to be used in the method and system is an estimate of the acceleration obtained using

estimates of time-derivatives of a bias-corrected measured angular (roll, pitch) rate. (Schiffman, col. 13, ll. 20-23).

PRINCIPLES OF LAW

Anticipation of a claim exists when each and every element set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 827 (1987); *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349 (Fed. Cir. 2002). Once a prima facie case of anticipation has been established, the burden shifts to the Appellant to prove that the prior art product does not necessarily or inherently possess the characteristics of the claimed product. *In re Best*, 562 F.2d 1252, 1255 (CCPA 1977); *In re Spada*, 911 F.2d 705, 708-09 (Fed. Cir. 1990).

ANALYSIS

Claims 1-31 stand rejected under 35 U.S.C. § 102(b) as anticipated by Schiffmann. Claims 1, 10, 18, and 25 are the independent claims among these. Appellant states that four groups of claims are presented, as defined by the four independent claims, but does not argue the patentability of any claim separate and apart from the rest. We will take claim 1 as the representative claim for deciding the appeal, and claims 2-31 will stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(vii) (2007).

The Examiner and Appellant disagree as to whether the Schiffmann patent discloses an angular accelerometer as claimed, as well as an integrator for integrating the sensed angular acceleration signal that is outputted from the accelerometer. The Examiner points to columns 12 and 13 (a more

specific identification being column 13, lines 16-23) of Schiffmann as disclosing the use of angular acceleration as a parameter in predicting the future roll angle of a vehicle. (Answer 3, 6). The Examiner asserts that it is therefore known, from Schiffmann, to employ an angular accelerometer to sense angular acceleration in a roll angle estimation apparatus. (Answer 6).

Appellant points out that the sensors used in the Schiffmann apparatus include three linear accelerators (longitudinal, lateral, vertical), and two angular rate sensors (pitch, roll), but no angular accelerometers. (Appeal Br. 7, 8). Appellant further identifies that the methodology employed in Schiffmann involves obtaining estimates of, but not direct measuring or sensing of, angular acceleration. (Appeal Br. 6-7). Schiffmann is said to obtain estimates of roll and pitch (angular) acceleration by taking the time derivatives of the measured roll and pitch rate signals. (Appeal Br. 6). Appellant contends that Schiffmann is further distinguishable in that the system therein does not disclose an integrator for integrating the sensed angular acceleration signal to produce an angular rate, in that Schiffmann does not produce a sensed angular acceleration signal. (Reply Br. 4).

We agree with Appellant that the Examiner has failed to establish that the Schiffmann patent discloses an apparatus that includes an angular accelerometer for sensing angular acceleration of a vehicle. The portions of the Schiffmann specification relied on by the Examiner do discuss the use of a value for angular acceleration in a method for estimating roll angle and possible rollover conditions. (FF 1). However, as amply shown by Appellant, the angular acceleration value obtained is not one that is actually sensed and outputted from an angular accelerometer, but is instead an estimate of the acceleration obtained by taking the time derivative of a

measured angular *rate* signal outputted from a roll or pitch *rate* sensor. (FF 2).

The lack of any disclosure of employing an angular accelerometer in the Schiffmann system leads further to the absence of the claimed integrator that operates on a sensed angular acceleration to produce an angular rate. Instead, in Schiffmann, the angular rate is directly sensed, and the angular acceleration (estimated) is then obtained through derivative calculation. (FF 1, 2). While, ultimately, each of Appellant's and Schiffmann's systems operates to predict a roll angle based at least in part upon angular acceleration and angular rate information, that information is obtained in different manners by different devices, as claimed by Appellant and as disclosed by Schiffmann. Appellant employs an angular accelerometer to measure angular acceleration and integrates to find an angular rate (Specification, ¶[0008]; Appeal Br., Claims Appendix), whereas Schiffmann measures an angular rate and differentiates to find a value representing an estimate of angular acceleration. The rejection, being based on alleged anticipation under 35 U.S.C. § 102(b), is thus one that we find we can not sustain.

CONCLUSION

We find that Appellant has successfully established that reversible error exists in the rejection of claims 1-31 under 35 U.S.C. § 102(b) as anticipated by Schiffmann.

ORDER

The decision of the Examiner to reject claims 1-31 under 35 U.S.C. § 102(b) as anticipated by Schiffmann is REVERSED.

Appeal 2008-1536
Application 10/722,706

REVERSED

LV:

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